

WASHINGTON DEPARTMENT OF ECOLOGY
ENVIRONMENTAL ASSESSMENT PROGRAM
FRESHWATER MONITORING UNIT
STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 29G060
STATION NAME: Panther Creek
WATER YEAR: 2012
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Introduction

Watershed Description

Ecology's telemetry stream gage on Panther Creek located at river mile 2.0. The watershed is mainly Forest Service land.

Gage Location

The gage is located on Bear Creek Road at the bridge. The station is on the left bank.

Table 1.

| | |
|---------------------------------------|-----------|
| Drainage Area (square miles) | 41 |
| Latitude (degrees, minutes, seconds) | 45 46 16 |
| Longitude (degrees, minutes, seconds) | 121 50 54 |

Discharge

Table 2. Discharge Statistics.

| | |
|---|-----|
| Mean Annual Discharge (cfs) | 183 |
| Median Annual Discharge (cfs) | 129 |
| Maximum Daily Mean Discharge (cfs) | 796 |
| Minimum Daily Mean Discharge (cfs) | 64 |
| Maximum Instantaneous Discharge (cfs) | 923 |
| Minimum Instantaneous Discharge (cfs) | 63 |
| Discharge Equaled or Exceeded 10 % of Recorded Time (cfs) | 68 |
| Discharge Equaled or Exceeded 90 % of Recorded Time (cfs) | 367 |
| Number of Days Discharge is Greater Than Range of Ratings | 14 |
| Number of Days Discharge is Less Than Range of Ratings | 0 |

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Narrative

Ten days were estimated because of uncertainty in the logger record due to instrument drift. There were 41 days where flow values are estimated based on other stations. Nineteen days were above the range of measured discharges but are considered reliable extrapolations. Discharges from 14 days throughout the water year exceeded the range of measured flows by two times the highest measured discharge and did not report.

Error Analysis

Table 3. Error Analysis Summary.

| | |
|--|------|
| Logger Drift Error (% of discharge) | 2.6 |
| Weighted Rating Error (% of discharge) | 17.5 |
| Total Potential Error (% of discharge) | 20 |

Rating Table(s)

Table 4. Rating Table Summary

| | | | |
|------------------------------|--------------------|--|--|
| Rating Table No. | 1 | | |
| Period of Ratings | 7-22-08 to 03-7-12 | | |
| Range of Ratings (cfs) | 58 to 471 | | |
| No. of Defining Measurements | 32 | | |
| Rating Error (%) | 17 | | |

| | | | |
|------------------------------|--|--|--|
| Rating Table No. | | | |
| Period of Ratings | | | |
| Range of Ratings (cfs) | | | |
| No. of Defining Measurements | | | |
| Rating Error (%) | | | |

| | | | |
|------------------------------|--|--|--|
| Rating Table No. | | | |
| Period of Ratings | | | |
| Range of Ratings (cfs) | | | |
| No. of Defining Measurements | | | |
| Rating Error (%) | | | |

Narrative

The rating is strong due to bedrock edges and generally good channel conditions. The Control is bedrock and boulders. Eight discharge measurements were taken. Measured discharges ranged from 66 to 287 cfs.

Stage Record

Table 5. Stage Record Summary

| | |
|--|-------|
| Minimum Recorded Stage (feet) | 9.63 |
| Maximum Recorded Stage (feet) | 12.98 |
| Range of Recorded Stage (feet) | 3.35 |
| Number of Un-Reported Days | 0 |
| Number of Days Qualified as Estimates | 10 |
| Number of Days Qualified as Unreliable Estimates | 0 |

Narrative

To correct for instrument drift, the stage record has been adjusted to known weekly laser level readings.

Modeled Discharge

Table 6. Model Summary

| | |
|--|--|
| Model Type (Slope conveyance, other, none) | |
| Range of Modeled Stage (feet) | |
| Range of Modeled Discharge (cfs) | |
| Valid Period for Model | |
| Model Confidence | |

Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

| Type | Date |
|------|------|
| All | 2009 |

Activities Completed

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|--|
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